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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,999	09/30/2003	Kurt A. Dobbins	0016.0026US1	2807
29127	7590	11/26/2008		
HOUSTON ELISEEVA 4 MILITIA DRIVE, SUITE 4 LEXINGTON, MA 02421			EXAMINER BURGESS, BARBARA N	
			ART UNIT	PAPER NUMBER
			2457	
			MAIL DATE	DELIVERY MODE
			11/26/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/673,999

**Applicant(s)**

DOBBINS ET AL.

**Examiner**

BARBARA N. BURGESS

**Art Unit**

2457

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This Office Action is in response to Amendment filed July 29, 2008. Claims 1-20 is presented for further examination.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al. (hereinafter "Ikeda", US Patent 6,788,683 B1) in view of Yoshizawa et al. (hereinafter "Yosh", US Patent 6,944,169 B1) and in further view of Kalkunte et al. (hereinafter "Kal", US Patent Publication 2002/0034187 A1).

As per claim 1, Ikeda discloses a method for transmitting data an IP network according to a source and destination flow table, a flow key, and one or more variables comprising:

Receiving a data transmission in an IP network (column 3, lines 4-8, column 4, lines 30-32, column 7, lines 38-40);

Extracting at least one field from a header of the data transmission (column 5, lines 52-54, column 7, lines 37-39);

Determining a most granular bit-value mask corresponding to the at least one field from a mask table having a plurality of bit-value masks (column 7, lines 65-67, column 8, lines 3-10, 16-25);

Applying the determined bit-value mask to the at least one field (column 7, lines 48-59, column 8, lines 35-40, column 9, lines 1-5);

Forming the flow key based on the application of the determined bit-value mask to the at least one field (Ikeda teaches an extracted packet header from an IP packet is masked with the retrieval flag to create a post-mask retrieval key and used for flow identification) (column 3, lines 11-15, 25-30, 64-66, column 8, lines 13-15, column 9, lines 44-47, 60-63);

Indexing the flow table with reference to the masked flow key (Ikeda teaches several tables used for obtaining flow information according to the masked key. A content-addressable memory (CAM) is used for flow identification as a flow retrieval table. A retrieval flag table stores numeric values and flow identification results corresponding to a post-mask retrieval key. A flow action table storing flow information according to the combination of a Flow Index and Forwarding Index used as the retrieval key) (column 3, lines 26-30, 54-56, column 4, lines 52-55, column 8, lines 56-60, 66-67, column 10, lines 32-39);

Looking up a flow entry in the indexed flow table (Ikeda teaches retrieving a flow retrieval corresponding to a post-mask retrieval key output from the retrieval flag table from a flow retrieval table) (column 5, lines 60-67);

transmitting data in the IP network according to the flow entry (Ikeda teaches retrieving flow action information from a flow action table wherein the information including setting quality of service (QoS), processing the IP packet based on the flow action information from the flow action table to create a transmission IP packet and transmitting the IP packet to its destination) (column 6, lines 10-19).

Ikeda does not explicitly disclose:

- Forming a combined, source/destination address entry based on the extracted at least one field;
- The plurality of bit-value masks include a plurality of granularities corresponding to each of the fields in the header.

However, in an analogous art, Yosh teaches entry of source and destination addresses in a flow control table. Each entry has a mask field (column 6, lines 55-67, column 10, lines 45-59).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Yosh's combined source and destination address in Ikeda's method in order to determine matches and special packets.

Ikeda, in view of Yosh, does not explicitly disclose:

- Performing a logical AND operation on bits in the network.

However, the use and advantage of performing such operation is well-known to one of ordinary skill in the art as evidenced by Kal (paragraphs [0023-0024]).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Kal's performing a logical AND operation in Ikeda's method in order to determine if a packet should be routed to a port or not.

As per claim 2, Ikeda discloses the method according to claim 1, further comprising:  
extracting a plurality of fields from a header of the data transmission (column 5, lines 52-54, column 7, lines 37-39);

determining a most granular bit-value mask corresponding to each of the plurality of fields from a plurality of mask tables, wherein each of the plurality of mask tables includes a plurality of bit-value masks (column 7, lines 65-67, column 8, lines 3-10, 16-25);

applying the determined bit-value mask to each of the plurality of fields (column 7, lines 48-59, column 8, lines 35-40, column 9, lines 1-5);

forming the flow key based on the application of the determined bit-value masks to the plurality of field (column 3, lines 11-15, 25-30, 64-66, column 8, lines 13-15, column 9, lines 44-47, 60-63).

As per claim 3, Ikeda discloses the method according to claim 1, further comprising:

if no bit-value mask in a mask table corresponds to the at least one extracted field, no mask is applied to the at least one field (column 10, lines 7-14).

As per claim 4, Ikeda discloses the method according to claim 3, further comprising:

if no flow entry corresponds to the formed flow key, a default value is used for the flow entry (column 8, lines 45-49).

As per claim 5, Ikeda discloses the method according to claim 1, wherein determining a most granular bit-value mask includes performing a longest prefix match for the at least one field (column 9, lines 49-56).

As per claim 6, Ikeda discloses the method according to claim 1, wherein the at least one field includes at least one selected from a group consisting of a source port, a destination port, a source IP address, and a destination IP address (column 7, lines 31-47).

As per claim 7, Ikeda discloses the method according to claim 1, wherein the mask table includes at least one selected from a group consisting of an address mask table and a port mask table (column 8, lines 28-31).

As per claim 8, Ikeda discloses the method according to claim 1, further comprising:  
entering a bit-value mask in the mask table by a service provider (column 7, lines 6-14).

As per claim 9, Ikeda discloses the method according to claim 1, wherein the bit-value mask corresponds to a range of a plurality of subscribers to a service (column 4, lines 17-20, 52-55).

As per claim 10, Ikeda discloses the method according to claim 9, wherein the plurality of subscribers includes at least one selected from a group consisting of network hosts and a subnetwork (column 3, lines 30-35).

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As per claim 11, Ikeda discloses the method according to claim 1, wherein the bit-value mask corresponds to at least one network application (column 3, lines 49-53).

As per claim 12, Ikeda discloses the method according to claim 1, wherein the flow entry includes transmission information (column 12, lines 59-65).

As per claim 13, Ikeda discloses the method according to claim 12, wherein the transmission information includes at least one selected from a group consisting of application specific qualities and service specific qualities (column 3, lines 33-36, 50-53).

As per claim 14, Ikeda discloses the method according to claim 13, wherein the transmission information includes at least one selected from a group consisting of policy, quality of service, and latency (column 4, lines 17-20, 52-55).

As per claim 15, Ikeda discloses a system for transmitting data according to a flow table, a flow key, and one or more variables, the system comprising:

a receiving unit configured to receive a data transmission (column 3, lines 4-8, column 4, lines 30-32, column 7, lines 38-40);

an extraction unit configured to extract at least one field from a header of the data transmission (column 5, lines 52-54, column 7, lines 37-39);

a mask table including a plurality of bit-value masks (column 3, lines 26-30, 54-56, column 4, lines 52-55, column 8, lines 56-60, 66-67, column 10, lines 32-39);

a masking unit configured to determine a most granular bit-value mask corresponding to the at least one field from the mask table, apply the determined bit-value mask to the at



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least one field, and output a masked flow key (column 7, lines 65-67, column 8, lines 3-10, 16-25);

a flow table indexed with reference to the masked flow key (column 5, lines 60-67);

a transmitter configured to transmit the data transmission according to a flow entry in the flow table corresponding to the masked flow key of the data transmission (column 6, lines 10-19).

Ikeda does not explicitly disclose:

- Forming a combined, source/destination address entry based on the extracted at least one field;
- The plurality of bit-value masks include a plurality of granularities corresponding to each of the fields in the header.

However, in an analogous art, Yosh teaches entry of source and destination addresses in a flow control table. Each entry has a mask field (column 6, lines 55-67, column 10, lines 45-59).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Yosh's combined source and destination address in Ikeda's method in order to determine matches and special packets.

Ikeda, in view of Yosh, does not explicitly disclose:

- Performing a logical AND operation on bits in the network.

However, the use and advantage of performing such operation is well-known to one of ordinary skill in the art as evidenced by Kal (paragraphs [0023-0024]).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Kal's performing a logical AND operation in Ikeda's method in order to determine if a packet should be routed to a port or not.

As per claim 16, Ikeda discloses the system according to claim 15, further comprising: a plurality of mask tables, each including a plurality of bit-value masks (column 7, lines 10-22).

As per claim 17, Ikeda discloses the system according to claim 15, wherein the masking unit is configured to determine a most granular bit-value mask by performing a longest prefix match for the at least one field (column 7, lines 60-67).

As per claim 18, Ikeda discloses the system according to claim 15, wherein the at least one field includes at least one selected from a group consisting of a source port, a destination port, a source IP address, and a destination IP address (column 7, lines 42-47).

As per claim 19, Ikeda discloses the method according to claim 15, wherein the mask table includes at least one selected from a group consisting of an address mask table and a port mask table (column 8, lines 22-32).

As per claim 20, Ikeda discloses the method according to claim 15, wherein the bit value mask is configured to allow at least one bit-value mask to be entered by a service provider (column 3, lines 25-35).

### ***Response to Arguments***

3. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BARBARA N. BURGESS whose telephone number is (571)272-3996. The examiner can normally be reached on M-F (8:00am-4:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571) 272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Barbara N Burgess/  
Examiner, Art Unit 2457

Barbara N Burgess  
Examiner  
Art Unit 2457

November 22, 2008

/ARIO ETIENNE/  
Supervisory Patent Examiner, Art Unit 2457